



# Second Quarter Report

April–June 2006

## Hood Canal Bridge Retrofit and East Half Replacement Project



*Tower crane operator lowers the anchor gallery assembly into place. Anchor cables will bolt to the assembly, connecting pontoon PA to a 1000+ ton concrete anchor. June 11, 2006*

### MOVING FORWARD

The State Route 104 Hood Canal Bridge Project reached several important project milestones this quarter, including: the first concrete floor pour; the first wall pour; and, the first mechanical component installation.

#### Construction Progress

Work moved forward on several different parts of the project. Pontoon construction is now 16 percent complete. East- and west-half material fabrication is 79 percent complete. In June, work began on the west-half leak detection system. Temporary work trestle removal began at the bridge site. Anchor construction planning started in May with the goal of beginning construction in early October. All this activity brought project completion up to 20 percent.

#### Public Outreach and Partnerships

Public presentations were given at seven community venues regarding current project progress and 2009 closure plans. Project staff conducted five pontoon construction site tours at Concrete Technology in Tacoma. Information on the project Web site, [www.hoodcanalbridge.com](http://www.hoodcanalbridge.com), was expanded.

#### Safety Update

The contractor, Kiewit-General (K-G) of Poulsbo, continued to emphasize work site safety. On June 5, K-G staff and craft workers received the Pacific Structures Project Safety Excellence Award at their Mass Safety Meeting.

#### Financial Report

As of June 30, 2006, \$213 million of the \$471 million budget has been expended. This quarter, the business group improved payment processes to better ensure timely contractor payments.

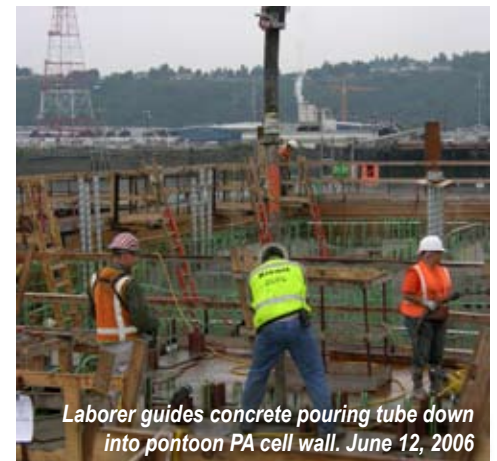
#### Environmental Stewardship

There was one incident, a vegetable hydraulic oil spill, on the beach at the bridge site in late June. Crews quickly cleaned it up and were commended for their response by the environmental oversight agencies.

#### Design Information

The design team completed the majority of the Closure Mitigation Commitment Plan, updated environmental documentation and began coordination with the Olympic

Region Planning Office and Olympic Region Real Estate Services to outline the support needed for closure mitigation plan implementation.



*Laborer guides concrete pouring tube down into pontoon PA cell wall. June 12, 2006*

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## CONSTRUCTION PROGRESS

WSDOT and K-G met several milestones during the second quarter of 2006, including the development of a quality performance matrix to track and monitor work on the project. The matrix consists of four quadrants or categories. The left side of the matrix identifies areas in need of improvement and the right side identifies areas of acceptable or improving performance.

- **Ongoing Issues:** Issues that recur or remain unresolved.
- **Current and Potential Issues:** Issues that have recently developed or have been identified as a potential risk. Most of these issues are resolved within two weeks.
- **Good Trends:** Ongoing or current issues that will be quickly resolved or show marked improvement.
- **Steady Performance:** Areas of performance that have continually met expectations.

As the project expands to more job sites, a different quality performance matrix will be developed and maintained for each site. Each matrix will be updated weekly and reviewed by WSDOT and K-G.

### Quality Performance Matrix: Pontoon Construction

June 26, 2006

#### ONGOING ISSUES

- Vertical post-tensioning ducts
- Post-tensioning duct saddles – locations and grouting procedures needed

#### STEADY PERFORMANCE

- Work plans
- Environmental compliance
- Quality tours
- Safety results

#### CURRENT & POTENTIAL ISSUES

- Pre-pour checklist sign-off coordination
- Complete integrated drawings
- Pontoon PA “C” shape wall forming
- Verification of concrete make-up elements at delivery to jobsite

#### GOOD TRENDS

- Pre-activity meeting quality
- Pontoon fillet concrete consolidation
- Concrete cure using burlap blankets
- Concrete pontoon wall water cure
- Permanent material receiving – ladders were a “home run”

An example of a recent quality performance matrix for the Concrete Technology site developed by WSDOT and K-G.

## Project Completion Status



### East- and West-half Material Fabrication

Material Fabrication is 79 percent complete. Work includes the truss and transition spans, lift span cylinders and other steel bridge parts. Both WSDOT and K-G are working diligently to make

sure quality components and materials are delivered on time.

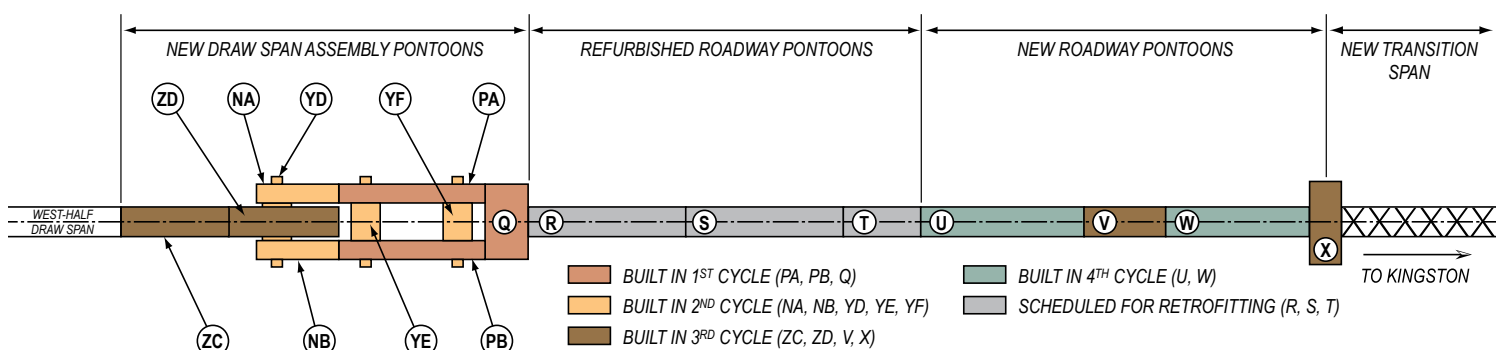
The first materials were incorporated into the pontoons during this quarter:

- Crews installed the first stainless steel and aluminum hatches in pontoon PA. Fabrication is nearing completion for all 550+ hatches needed for the 14 new pontoons.
- Workers set in place the first guide roller anchor bolt assemblies for pontoon PA. The anchor bolts hold the 10-ton guide rollers in

place. The guide rollers keep the draw span in alignment as the bridge opens and closes for marine traffic.

- The first pontoon access ladders arrived on site, ready for installation.
- Anchor gallery assemblies for pontoon PA were delivered and installed. The anchor gallery is where the anchor cables attach to the pontoons.
- Structural steel plates were delivered. The plates are part of the joint assembly that connects pontoon Q to pontoon R.
- Hydraulic power units arrived and will be installed in pontoon Q in early August. These units operate the east lift spans. The lift spans raise during a marine opening to allow the draw span to retract.

## Birds-eye View of New East-half

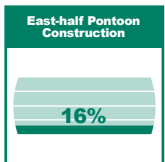






Workers spread concrete throughout the pontoon cell during the first pontoon concrete pour. April 28, 2006

### East-half Pontoon Construction

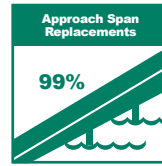


**First concrete pour:** Less than six months after WSDOT and K-G began work at Concrete Technology in Tacoma, 140 cubic yards of concrete flowed into the first new Hood Canal Bridge pontoon.

**First pontoon wall pour:** On Friday, May 26, WSDOT and K-G placed concrete for the first pontoon wall section. The crews worked around the pontoon cells in a pattern, pouring approximately two feet at a time for the first 17-foot tall wall section. Crews placed the 160 cubic yards of concrete in less than eight hours. This wall pour was successful due to a lot of hard work. The pontoon walls are only eight to ten inches thick, so getting concrete down to the bottom of the 17-foot tall wall is difficult. WSDOT and K-G engineers made the process run efficiently by developing a unique concrete mix and using special pouring techniques.

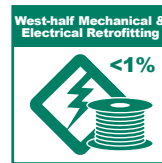
**Concrete pour progress:** As of June 30, 2006, 17 of 56 concrete pours have been completed. There will be a concrete pour every week in order to complete the three pontoons currently under construction (PA, PB and Q) by January 2007. All together, 56 concrete pours are required to place the 7,952 cubic yards of concrete that make up pontoons PA, PB and Q. That's enough concrete to build a single-lane highway almost 3.5 miles long. Night work has begun at Concrete Technology to ensure the project is kept on schedule.

### Hood Canal Bridge Site



**Temporary Work Trestle Removal:** K-G began work on June 15, 2006 to remove the Hood Canal Bridge site work trestle that was put in place as a construction aid for the 2004-2005 west-half widening and approach replacement work.

### West-half Mechanical and Electrical Retrofitting



**Leak detection system:** Electricians began work on the west-half leak detection system in early June. Crews surveyed the existing pontoon conduits in order to verify design changes and to incorporate them into electrical drawings. Crews removed old wiring in the pontoons and began installing new system components. In a few months, crews will install the final wiring and perform field checks of the devices and the system.



Worker removes wood forms from first pontoon PA concrete wall. May 31, 2006

## Project Overview

WSDOT and K-G will construct all 14 new pontoons inside the 150-foot wide by 465-foot long Concrete Technology graving dock by completing construction over four cycles. Three pontoons will be built in the first cycle, five in the second cycle, four in the third and two in the fourth cycle.

Another three pontoons, built during the west-half bridge replacement in the early 1980s, will be retrofitted in Seattle. The completed east-half pontoon roadway sections and fully assembled east-half draw span will be floated into place during the bridge closure in May and June 2009.

Anchor construction is scheduled to begin in October 2006. Anchors should be installed on the Hood Canal floor by August 2007.

## Project Schedule

2006 MILESTONES	COMPLETION GOAL	ACCOMPLISHED
Graving dock modifications	April 06	April 06
2007 MILESTONES	COMPLETION GOAL	ACCOMPLISHED
Float out – 1st cycle of pontoons	January 07	
Anchor construction	May 07	
Float out – 2nd cycle of pontoons	August 07	
Anchor placement	August 07	
Rehabilitation of old pontoons	September 07	
Draw span assembly	December 07	
2008 MILESTONES	COMPLETION GOAL	ACCOMPLISHED
Float out – 3rd cycle of pontoons	April 08	
Float out – 4th cycle of pontoons	September 08	
Roadway assembly	December 08	
2009 MILESTONES	COMPLETION GOAL	ACCOMPLISHED
Pontoon mechanical & electrical	January 09	
Superstructure construction	April 09	
Float in & installation (bridge closed)	May-June 09	
2010 MILESTONES	COMPLETION GOAL	ACCOMPLISHED
Final project completion	December 10	

## DESIGN INFORMATION

This quarter, the Design Team focused on:

- Closure Mitigation Commitment Plan.** The plan was nearly completed. It includes the work scope, project cost estimate and schedule. Five major elements are detailed in the closure mitigation plan: medical transportation assistance; alternate driving routes improvements and traffic control; rideshare opportunities; transportation options; and, public outreach.
- Environmental and developmental documentation.** Documentation began to prepare for the permit application process. The permits are needed for anchor construction, outfitting at Todd Shipyards, construction of two park-and-ride lots and ferry terminal construction.
- Coordination with the Olympic Region Planning Office.** The support processes were established for public transportation plans, including transit, rideshare and medical transportation.
- Coordination with Olympic Region Real Estate Services.** Support was provided to clarify Shine Pit and Port Gamble park-and-ride lots land and facility lease requirements.
- Closure Mitigation Planning with the Northwest Region Emergency Medical Services (EMS) and Trauma Care Council.** WSDOT met with EMS group to share 2009 closure information.
- Coordination with K-G regarding anchor construction.** Research began on the submittal requirements.
- Drawings for the electrical and mechanical systems.** Drawings were completed for cycle one pontoon construction and were started for cycle two pontoon construction and R, S and T retrofitting.
- Transition truss fabrication.** Oregon Iron Works, the company responsible for welding the trusses together, met with WSDOT bridge design engineers and fabrication inspectors and reviewed preliminary work plans.

## SAFETY UPDATE

K-G has made safety a number one priority. On June 5, K-G staff and craft workers received the Pacific Structures Project Safety Excellence Award at their Mass Safety Meeting. Pacific Structures toured all their projects in May. The Hood Canal Bridge Project scored the highest of all the projects visited. The project's score was 102 percent, including bonus points. Pacific Structures will give this award every six months after the evaluation team finishes its twice yearly project sponsor safety tours. The K-G project team is striving to keep the award for the duration of the Hood Canal Bridge Project.

### Safety Committee

The safety committee conducts an inspection of the entire project each Tuesday. The committee recognizes positive performance levels and those areas or trends needing improvement. Unsafe behaviors and conditions are corrected immediately. Employees are informed of their good efforts and how different methods can help improve an unsafe behavior. The safety committee will continue to focus on unsafe behaviors, material handling and housekeeping.

Pictures and notes are taken during the inspections. The notes are reviewed with the superintendents, engineers and foremen on Thursday of the same week. They are reviewed by the crews on Friday mornings.

The members of the safety committee are rotated monthly to guarantee new people are evaluating project performance. The members include the project safety manager, a WSDOT representative, a superintendent, an engineer, a subcontractor representative and a craft employee.

This quarter the team focused on material handling, housekeeping and access during mass safety meetings, tool box meetings, safety



*Phil Wallace, Kiewit-General Pontoon Construction Manager, accepts the Project Safety Excellence Award. June 5, 2006*

committee inspections, daily superintendent inspections and weekly foreman safety lunches.

### Recordable Injuries

WSDOT, K-G and their project subcontractors worked 86,982 hours this quarter on the Hood Canal Bridge Project. Only one recordable injury occurred. On June 16, a worker lifted plywood and strained his back. He received appropriate medical care for his injury. After this incident, K-G reviewed proper lifting techniques with the entire crew.

All injuries and any near-misses are reviewed to determine ways to prevent similar incidents in the future.

## PERSONNEL SUMMARY

### April-June 2006

	Hours Worked	Recordable Cases	LWD Cases	Lost Workdays	Restricted Cases	Restricted Days	Fatalities
<b>K-G</b>	<b>55,852</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Subcontractors</b>	<b>11,101</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>WSDOT</b>	<b>20,029</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total</b>	<b>86,982</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>



## PUBLIC OUTREACH AND PARTNERSHIPS

The Hood Canal Bridge communication team accomplished a variety of public outreach activities during the second quarter.

Activity	April-June 2006
• Contacts with constituents by telephone, e-mail and mail	40*
• Page views to <a href="http://www.hoodcanalbridge.com">www.hoodcanalbridge.com</a>	13,839
• Speakers bureau presentations given	7*
• Pontoon construction site tours conducted	6*
• Media contacts made	15*
• Press releases circulated	6*
• Stories published	60*
• Publications produced	14*

\*Please note: These numbers do not include communications regarding the Port Angeles graving dock.

### Tours

The Hood Canal Bridge Project started pontoon construction site tours in June to visually communicate construction progress and familiarize tour participants with the project. The goal is to provide safe and reasonable access to interested citizens while maintaining a safe environment for project workers.

- *When can I tour the project?*

Tours of the Hood Canal Bridge pontoon construction facility are available on a limited basis. Tours will be conducted in small groups (12 or less participants) and will be filled on a first-come, first-served basis. Larger groups should contact WSDOT's Hood Canal Bridge communications staff at (253) 305-6412 to discuss special arrangements.

- *What are the requirements?*

Reservations must be made at least two weeks in advance of your tour by calling the WSDOT Hood Canal Bridge Office at (253) 305-6412.

Tour participants must be adults age 18 or over. Children age 15 or older when accompanied by a responsible adult, such as a parent, guardian, or a teacher with written permission to supervise the child on the tour. No pets allowed.

All participants will be required to sign a liability waiver prior to participating in a tour.



A view of cycle one pontoon construction progress at Concrete Technology from the Hood Canal Bridge construction camera, viewable at [www.hoodcanalbridge.com](http://www.hoodcanalbridge.com). June 30, 2006

Safety is the most important consideration. WSDOT provides all tour participants with safety gear, which may include safety glasses, safety vests, hardhats, gloves, and ear protection, as appropriate for the visit that day. Locations covered on a tour may vary from one tour to the next depending on project activity.

- *What should I wear?*

All tour participants must wear clothing appropriate for a construction site. This includes over-the-ankle boots, long pants, shirts with short or long sleeves, and clothing appropriate for weather conditions. People wearing clothing such as tank tops or other sleeveless shirts, shorts, dresses, skirts, and less sturdy shoes will not be allowed on a tour.

- *What conditions should I expect?*

Expect to encounter uneven and slick walking surfaces, the potential for falling objects, and other construction site hazards. Be prepared for rapidly changing weather conditions including high winds, rain, sleet, and seasonal snow or sun.

- *How do I register to take a tour?*

You may register by calling WSDOT's Hood Canal Bridge Office during regular office hours (8 a.m. – 5 p.m. PST) at (253) 305-6412.

## FINANCIAL REPORT

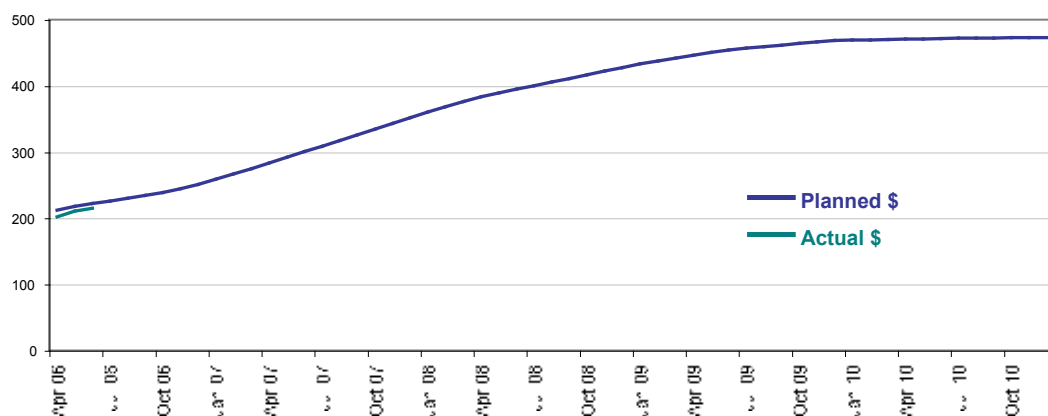
Over this quarter, project expenditures closely tracked to the budget of \$15.6 million. Total expenditures were \$15.5 million, with K-G's portion of the total being \$12.7 million. Processing time for K-G invoices took an average of 12 business days from receipt of estimate documents to warrant issuance.

The construction contract with K-G is tracked in two primary categories: original commitments and modified commitments. Original commitments, such as existing bridge widening, approach work and fabrication of major materials for pontoon construction, are 91 percent expended. Modified commitments, including pontoon and anchor construction, are eight percent expended.

WSDOT continues to work closely with K-G to monitor and evaluate all current costs and remaining budget amounts to avoid surprises in the project's cash flow requirements. Additionally, WSDOT analyzes all costs on a monthly basis to ensure adherence to the approved budget.

### Planned vs. Actual Expenditures

Total Project Cost, Dollars (millions)



Source: WSDOT Hood Canal Bridge Project Office

## ENVIRONMENTAL STEWARDSHIP

Along with safety, quality, schedule and budget, environmental stewardship is a core value of the Hood Canal Bridge project team. Weekly inspections are made at all construction sites to ensure appropriate preventative measures are in place. Extensive plans are developed prior to all construction work to help protect wildlife and to minimize the affect of the bridge work on the environment.

When an incident does occur, such as the vegetable hydraulic oil spill that occurred this quarter, these plans guide the crew's response. Approximately two quarts of vegetable hydraulic oil was spilled on the beach on June 20 after a hydraulic line broke on a vibratory hammer that was removing bridge site temporary work trestle piles. Crews acted quickly to implement spill response measures. The Department of Ecology commended crews for their quick response after the incident.

### Hood Canal Bridge Project Financial Report

Expenditures as of June 30, 2006

	Budget	Expended	% Expended
Original Commitments	\$206,063,000	\$192,641,800	93%
Preliminary Engineering	\$13,990,000	\$12,065,000	86%
Port Angeles Graving Dock	\$86,823,000	\$84,462,000	97%
Bridge Rehabilitation & Approaches	\$54,760,000	\$48,714,800	89%
Major Materials for Bridge Completion	\$61,440,000	\$47,400,000	77%
Anticipated Audit Adjustment	\$(10,950,000)		0%
Modified Commitments	\$264,905,000	\$20,059,355	8%
Construction Management	\$32,036,000	\$4,732,355	15%
Closure Mitigation	\$9,644,000	\$412,000	4%
Bridge Construction	\$220,500,000	\$14,915,000	7%
Mechanical & Electrical Retrofitting	\$2,725,000		0%
<b>Total Project</b>	<b>\$470,968,000</b>	<b>\$212,701,155</b>	<b>45%</b>

Source: WSDOT Hood Canal Bridge Project Office

## LOOKING AHEAD: July–September 2006

### Construction Progress

- Start post tensioning in August for pontoon PA.
- Finalize moorage location(s) for both pontoons and anchors
- Complete detailed planning for anchor construction. Form fabrication will start in August.
- Conduct final check-up on pontoons R, S and T before transport plans are solidified.
- Evaluate whether or not to perform a portion of the hydraulic piping installation in the pontoons prior to float-out.
- Review truss fabrication submittals.

### Public Outreach and Partnerships

- Increase 2009 closure mitigation outreach.
- Continue placing displays at community venues.
- Make additional Web site improvements.

### Safety Update

- Implement new WSDOT safety program elements.

### Environmental Stewardship

- Weekly monitor various construction sites.

### Design Information

- Prepare drawings for West-half Mechanical and Electrical Retrofitting work.
- Begin planning for rehabilitation of pontoons R, S and T and cycle 2 pontoon construction by identifying design-related paperwork needed.

### Hood Canal Bridge Retrofit and East-half Replacement Project

East-half Replacement

Completion Goal: 2009

West-half Retrofit Completion Goal : 2010

#### Q. Where is the bridge?

*A. The Hood Canal Bridge is located between Kitsap and Jefferson counties at the northern mouth of the Hood Canal.*

#### Q. Why is it important?

*A. It serves as a vital economic and social link between the greater Puget Sound and the Olympic Peninsula.*

#### Q. What is WSDOT doing?

*A. The Washington State Department of Transportation is improving this lifeline by replacing the east-half floating portion of the bridge, replacing the east and west approach spans, replacing the east and west transition truss spans and updating the west-half electrical system. The project completion estimate is 2010.*

#### Q. What can drivers do to stay informed?

*A. Sign up to receive the latest news regarding the Hood Canal Bridge Project and other related area transportation news in your e-mail inbox. Visit [www.hoodcanalbridge.com](http://www.hoodcanalbridge.com) to subscribe.*



This report highlights updated Hood Canal Bridge Project information from April-June 30, 2006.

For more information about the Hood Canal Bridge Project visit the project web site, **[www.hoodcanalbridge.com](http://www.hoodcanalbridge.com)**, or contact project staff:

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